Claims

1. A method for preparing copolymers of styrene and maleimide, comprising the steps of:

(i) blending copolymers of styrene and maleic anhydride with an imidizing agent in a supercritical state; and

(ii) removing residual amines and by-products.

2. A method for preparing copolymers of styrene and maleimide, comprising the steps of:

(i) blending copolymers of styrene and maleic anhydride with an imidizing agent and supercritical carbon dioxide; and

(ii) removing residual amines and by-products.

3. A method for preparing copolymers of styrene and maleimide, comprising the steps of:

(i) blending copolymers of styrene and maleic anhydride with an imidizing agent in a supercritical state and supercritical carbon dioxide; and

(ii) removing residual amines and by-products.

4. The method according to any one of claims 1 to 3, wherein the copolymers of styrene and maleic anhydride used in step (i) comprise 5-50 wt% of maleic anhydride monomer and 95-50 wt% of styrene monomer, and have a weight average molecular weight of 5,000 to 300,000.

5. The method according to any one of claims 1 to 3, wherein the imidizing agent is ammonia or primary amines.

6. The method according to claims 1 or 3, wherein the

imidizing agent in a supercritical state is obtained by introducing the imidizing agent into a blending zone having conditions under which the imidizing agent transforms into a supercritical state, in step (i).

7. The method according to claim 6, wherein the imidizing agent is introduced under a pressure of 700 psi to 2,000 psi.

8. The method according to claim 2 or 3, wherein the supercritical carbon dioxide is obtained by introducing carbon dioxide into a blending zone having conditions under which carbon dioxide transforms into a supercritical state, in step (i).

9. The method according to claim 8, wherein carbon dioxide is introduced under a pressure ranged from 2,000 psi to 7,000 psi.

10. The method according to any one of claims 1 to 3, wherein the imidizing agent is used in the amount of 0.8 to 2 moles per mole of maleic anhydride in the copolymers of styrene and maleic anhydride, in step (i).

11. The method according to any one of claims 1 to 3, wherein the pressure in the blending zone is 700 psi to 2,000 psi and the temperature in the blending zone is 150°C to 320°C, in step (i).

12. The method according to any one of claims 1 to 3,

wherein the temperature is set to 300°C to 320°C after carrying out step (i).

13. The method according to any one of claims 1 to 3, wherein step (ii) is carried out by using a depressurization device.